The Report Committee for Ariel Samantha Shalin
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Arctic Resource Development: A Public Affairs Approach

APPROVED BY
SUPERVISING COMMITTEE:

Supervisor:

Edwin Dorn

Co- Supervisor:

David Spence

Kenneth Matwiczak

Arctic Resource Development: A Public Affairs Approach

by

Ariel Samantha Shalin, B.A.

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Dedication

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Abstract

Arctic Resource Development: A Public Affairs Approach

Ariel Samantha Shalin, MPAff/MBA

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Supervisors: Edwin Dorn, David Spence

The Alaskan Arctic region is estimated to hold the largest undiscovered Arctic oil deposits—about 30 billion barrels. Realizing this immense potential, however, will not be easy, as firms face technical, political and regulatory barriers in their quest to explore and develop this frontier. To overcome these challenges, energy companies should adopt a comprehensive education and engagement strategy. This document formulates key elements of a strategy to help alleviate concerns of the stakeholders who have the power to thwart development. At a time of uncertainty over offshore oil and gas development in the U.S. Arctic, a combined education and engagement campaign promises to help interested parties protect and expand their license to operate in the region.

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I. Introduction

Oil and gas firms are increasingly interested in developing offshore Arctic hydrocarbon resources. The region's undiscovered offshore resources are vast and the potential for extraction is great. As the Arctic becomes gradually more accessible due to diminishing ice coverage and technological innovation, these unexploited resources become increasingly accessible and economically attractive. However, oil and gas companies face technical, political and regulatory barriers in their quest to explore and develop the next great frontier, particularly in the U.S. portion of the Arctic.

This report offers strategic advice to oil companies looking to protect and ultimately expand their license to operate in the U.S. Arctic. It addresses concerns from stakeholders with the capacity to impede firms' plans for the region—regulators and government officials at the federal, state and local level, as well as residents living on the front lines of the next frontier—the indigenous population of the North Slope Borough.

To contextualize the strategy discussion, I address the following questions:

- What constitutes the Artic and why is it challenging to development?
- Why do energy companies want to extract Arctic hydrocarbon resources?
- What is the current state of regulation and development in the U.S. Arctic?
- What are the key issues voiced by critics and proponents?

With this foundation in place, I proceed to offer strategic advice to firms with an interest in Arctic oil and gas development. Combining education and engagement approaches should help firms protect and expand their license to operate at a time of uncertainty over the future of offshore oil and gas development in the U.S. Arctic. The engagement component has perhaps the greatest potential to facilitate progress on offshore Arctic drilling and is fundamental to this report.

II. Background

DEFINING THE ARCTIC

The U.S. Energy Information Administration (EIA) defines the Arctic as "the Northern hemisphere region located north of the Arctic Circle," which begins at 66.56° north latitude.[1] The Arctic accounts for about six percent of the earth's surface—one-third land, one-third third shallow water (less than 500 meters), and one-third deep water (greater than 500 meters).[2]

Eight countries border the Arctic—Canada, Denmark (Greenland), Finland, Iceland, Norway, Russia, Sweden and the United States.[3] While no doubt jurisdictional uncertainty will affect the future of resource development in the Arctic, this report is limited to hydrocarbon resource development in undisputed U.S. Arctic territory—offshore Alaska.

Five areas constitute the Alaskan Arctic, including the Arctic National Wildlife Refuge, the Central Arctic, the National Petroleum Reserve – Alaska, the Beaufort Sea Outer Continental Shelf and the Chukchi Sea Outer Continental Shelf.[4] Onshore development in the region dates back approximately half a century, with the discovery of oil at Prudhoe Bay in 1967.[5] Offshore development in the Beaufort and Chukchi Seas, by contrast, remains far more elusive and is at the center of this report.

ARCTIC DEVELOPMENT CHALLENGES

The oil and gas industry faces significant physical and economic challenges in the Arctic, which makes the development of oil and gas resources in the region a high risk and high cost venture. These challenges include extreme weather, limited infrastructure, long project lead times and economic hurdles.

Extreme Weather

The Alaskan Arctic is no stranger to "extreme cold, extended seasons of darkness, hurricane-strength storms, and pervasive fog," which impedes resource access and extraction.[6] The Chukchi and Beaufort Seas also have ice coverage for up to nine months a year, which confines the drilling window for oil and gas firms to a short summer season.[7] The harsh weather requires special equipment designed to withstand extreme temperature and ice movements with potential to damage equipment.[8] The presence of ice, darkness and harsh winds could also complicate oil-spill response efforts should an incident occur.

Limited Infrastructure

Infrastructure is sparse in the Alaskan Arctic, which turns greenfield development into a more expensive and challenging endeavor. For instance, Alaska averages approximately 0.007 miles of paved road per square mile, and these roads are primarily located in Southern Alaska.[9] Limited transportation access will inevitably drive up construction costs of any type while prolonging development operations and the investment cycle.

Paying for the needed Arctic infrastructure will be no easy task for oil and gas firms. "The cost of developing oil and natural gas fields in the Arctic is so high that large fields are initially necessary to pay for the infrastructure required to later develop the smaller…deposits."[10] Therefore, the discovery and development of large Arctic hydrocarbon fields has major implications for future development in the region.

Limited infrastructure will also complicate response efforts in the event of an oil spill incident. The Coast Guard base closest to the Chukchi Sea is approximately 1,000 miles away.[11] Moreover, the Coast Guard has only one fully operational icebreaker, which undermines response capabilities.[12]

Long Project Lead Times

"Long supply lines from the world's manufacturing centers require equipment redundancy and a larger inventory of spare parts to ensure reliability."[13] Furthermore, the extended time it takes to transport materials from manufacturing centers to the Arctic Circle significantly increases the risk of scheduling delays and cost overruns. Since the window for Arctic operations is already diminished by extreme weather conditions for most of the year, firms must be wary of delays that could set drilling back by years at a time, rather than months at a time.[14]

Economic Hurdles

There are additional economic hurdles which make offshore Arctic resource development a costly endeavor. First, the EIA estimates onshore Arctic projects in Alaska's North Slope to "invoke a capital cost factor ranging from 1.5 to 2.0 relative to similar oil and natural gas projects undertaken in Texas" for the reasons stated above.[15] Offshore projects are likely to be even more expensive than onshore ventures. Second, the Alaskan Arctic is expected to contain more natural gas than oil, with the former far more expensive to transport while commanding a lower price in the market.[16] Third, recent discoveries of conventional and unconventional gas resources around the world lower the appeal of Arctic development. "U.S. Arctic gas development costs may be as much as double those of comparable lower-48 developments."[17] When less risky opportunities exist, it may be difficult for firms to justify to shareholders riskier Arctic projects.

THE ALLURE OF THE ARCTIC

Despite these challenges, more and more oil and gas firms show interest in Arctic resource development, for the Arctic resource base is large and increasingly economic. The U.S. Geological Survey (USGS) offers the following estimates for the Arctic

region—22 percent of the world's undiscovered conventional oil and natural gas resource base, 30 percent of the world's undiscovered natural gas resources, 13 percent of the world's undiscovered oil resources, and 20 percent of the world's natural gas liquid resources.[18] This equals approximately 90 billion barrels of oil, 1,669 trillion cubic feet of gas, and 44 billion barrels of natural gas liquids.[19] USGS informs us that 84 percent of these resources are located offshore.[20]

Approximately 36 percent of the Arctic resources are within North America's jurisdiction. "The North American side of the Arctic is estimated to have about 65 percent of the undiscovered Arctic oil, but only 26 percent of the undiscovered Arctic natural gas. The Alaskan Arctic region is estimated to hold the largest undiscovered Arctic oil deposits, about 30 billion barrels."[21] Therefore, the North American Arctic may be more attractive than the Arctic zones in other countries, based on resource potential.

Of the oil resources located in the North American Arctic offshore, 8.2 billion barrels are found in the Beaufort and 15.3 billion in the Chukchi.[22] The economic potential for oil and gas development in the U.S. Arctic tops $1 trillion, and "these high-cost and high-risk resources are increasingly commercially exploitable and affordable, given the current and expected price of oil."[23,24] With some large oil and gas fields around the world in decline, particularly in Alaska, the Arctic provides energy firms with the appealing opportunity to replenish their reserves.

CURRENT STATE OF U.S. ARCTIC DEVELOPMENT

Several oil and gas companies are looking to move forward with U.S. Arctic resource development. However, due to setbacks in the region, as well as uncertainty over the regulations governing Arctic resource development, industry finds itself in a holding pattern. This section explains the players with a vested interest in the U.S. Arctic, as well as the key regulatory uncertainties at this point in time.

The Players

Given the substantial cost difference between developing Arctic oil and gas versus more accessible hydrocarbon resources around the world, early Arctic exploration and development will be reserved for the most profitable energy firms. Only the largest firms have begun to tap resources across the Arctic Circle, including ExxonMobil, Shell, BP, Statoil, Eni, Total SA, Chevron, ConocoPhillips, Rosneft and Gazprom.[25] If these firms prove the technology and drive down development costs, the rest of the industry will take note, and in time, we may see existing independent oil and gas firms or new Arctic-based companies move to the Arctic Circle.

Royal Dutch Shell (Shell) has taken the lead in U.S. Arctic development to date and has stumbled along the way.

> The severe challenges of operating in the Arctic have…proved daunting for Shell, which has spent $4.5 billion to exploit reserves off Alaska but has yet to drill a single producing well… In the summer of 2012, during Royal Dutch Shell's first attempt to probe its Arctic deposits, shifting winds and floating ice halted drilling. Several months later, when one of its drilling rigs ran aground during an especially severe storm, Shell announced that it would suspend operations in Alaska's Arctic waters and that before it proceeded, it would bolster its capacity to operate there.[26]

Shortly after Shell announced its plan to suspend operations in February 2013, ConocoPhillips followed suit and put its drilling plans for April 2014 on hold.[27] The industry remains in a holding pattern, expecting new arctic-specific drilling regulations in the near future. While the government does not require firms to await the new regulations, moving forward prior to their release could prove costly and wasteful, as firms may need to revise their plans to comply with the new regulations. Thus, it is prudent for firms to wait for the new rules before committing resources to offshore Alaska.

The Regulations

Over 30 laws govern oil and gas exploration, development and production on the U.S. Outer Continental Shelf. These laws cover a wide range of issues and include the National Environmental Policy Act, Endangered Species Act, Coastal Zone Management Act, Federal Water Pollution Control Act, Ports and Water Safety Act, Marine Mammal Protection Act, Clean Air Act, National Historic Preservation Act, Oil Pollution Act, and the Federal Oil and Gas Royalty Management Act.[28] While an in-depth overview of oil and gas regulation is beyond the scope of this paper, it is important to address Arctic-specific regulations with the potential to influence a firm's license to operate in the U.S. Arctic offshore.

The U.S. Department of the Interior (DOI) expects to release Arctic-specific regulations in 2014. Shell and ConocoPhillips, as well as other firms with potential plans for U.S. Arctic resource development, are eagerly awaiting the release of the new DOI regulations before deciding whether to proceed. The Bureau of Ocean Energy Management (BOEM), the department within DOI that "manages the offshore energy resources of the Outer Continental Shelf," will be the agency in charge of the new regulations. They plan to incorporate lessons learned from Shell's unsuccessful venture in the Chukchi Sea.[29] While the regulations have yet to be released, BOEM has publicly proclaimed that "areas addressed by the new rulemaking may include, but are not…limited to: well control and subsea containment, relief well capability, contractor oversight, integrated operations and emergency plans, and resource sharing among companies working in Alaska."[30]

Another source of current regulatory uncertainty surrounding Arctic resource development is proposed changes to the federal government's offshore leasing strategy. The oil and gas industry is dissatisfied with BOEM's proposal to drop wide acreage sales

in favor of a more targeted approach.[31] Targeted leasing is more prevalent in areas of low interest, but despite substantial interest in Arctic development, BOEM is considering moving from basin-wide to targeted leasing.[32] This inconsistency is not lost on oil and gas firms, and the industry is making its opposition known.

Industry trade associations, including the American Petroleum Institute and the National Ocean Industries Association, argue the new targeted approach will discourage energy firms from participating in auctions for leases in the Chukchi Sea planned for 2016. They argue that the area-wide leasing approach is critical to a firm's ability to make informed decisions; geologists must be able to consider the entire geological basin to make knowledgeable bidding choices. "Most oil companies have highly structured criteria for making exploration decisions. Allowing a firm to take the entire basin into consideration gives the U.S. the full benefits of a diversity of approaches and exploration philosophies for areas previously unleased."[33]

Second, a targeted leasing approach is more costly for firms. The Alaska Oil and Gas Association likens the approach to compiling an Environmental Impact Statement and "asking industry to endure the temporal and economic burden of compiling data without any guarantee that those efforts will correspond to an opportunity to engage in leasing."[34] It would require firms to assess the value of the Chukchi Sea acreage several years in advance without knowing which parts of the region will be available during auction.[35] The group calls upon BOEM to identify specific tracts for the 2016 action before requiring bidders to analyze the resource potential of the acreage.[36]

Third, the industry fears that targeted leasing is the first step on a slippery slope toward limited oil and gas operations in the Arctic region. "If targeted leasing as a longer-term strategy were to have the effect of taking acreage and offshore prospects off of the table, we will have difficulty with it," said Richard Ranger, senior policy adviser at the

American Petroleum Institute.[37] BOEM has yet to make a final decision on its leasing strategy approach, but the industry is closely monitoring the issue.

Despite uncertainty over Arctic leasing and regulation, the U.S. government is unlikely to ban offshore Arctic drilling. In May 2013, the White House released its *National Strategy for the Arctic Region*, which puts forth the U.S. government's priorities for the Arctic. The Report focuses on strategies to advance the nation's security interests, pursue responsible Arctic stewardship and strengthen international cooperation.[38] In this document the White House explicitly acknowledges Arctic oil and gas development's role in achieving these goals.[39] "Continuing to responsibly develop Arctic oil and gas resources aligns with the United States' 'all of the above' approach to developing new domestic energy sources, including renewables, expanding oil and gas production, and increasing efficiency and conservation efforts to reduce our reliance on imported oil and strengthen our nation's energy security."[40]

Given this position formulated by President Obama and his energy policy advisors, offshore Arctic resource development has the explicit approval of the U.S. Executive Branch and the potential to become a reality. However, the scope in which energy firms are permitted to move forward with Arctic exploration, development and production remains uncertain.

III. Issues

Arctic oil and gas development is a high risk, high reward venture. Thus, strategic advice for oil and gas firms facing public and government scrutiny must begin with a risk assessment in light of the potential rewards. The risks and rewards largely pit environmental concerns against economic benefits.

RISKS

Critics of oil and gas development in the Arctic raise several concerns, including the potential for marine mammal disturbance and environmental damage. The World Wildlife Foundation (WWF) and Greenpeace sum up the views of environmental opposition.

Marine Mammal Disturbance

WWF's concern is that seismic operations, used by energy firms to explore for offshore resources, can be detrimental to whales and other marine mammals that use sound to forage for food and communicate with other members of their species. Critics argue that the noise could cause "injury, confusion, and even death."[41] Opponents also believe that the infrastructure required to develop Arctic hydrocarbon resources—including roads, pipelines and housing compounds—will inevitably "degrade and destroy" animal habitats and confound migratory patterns.[42]

Environmental Damage

WWF argues that "oil and gas operations could release many tons of harmful pollutants into the air and discharge dangerous chemicals into the water, thereby degrading the clean air and water that polar bears, whales, walrus—and humans—depend on for survival."[43] Perhaps the biggest concern voiced by critics is alleged lack of response capabilities in the event of an oil spill. WWF maintains that "oil trapped under

the sea ice cannot be cleaned up until the sea ice melts. Crews may be unable to reach the spill for months until weather clears, or their response ship may not be able to maneuver in the ice."[44]

Greenpeace seconds this position, arguing that the limited window for drilling could prove disastrous if a blowout occurs: "The successful drilling of vital relief wells, crucial to permanently capping a ruptured well, could not be guaranteed before the winter ice returns. If relief wells are left unfinished over the winter, oil could continue to gush out for up to two years."[45] Should this scenario materialize, not only would ecological damage be permanent, but there would be devastating consequences for the surrounding indigenous communities that rely on Arctic resources for their food and livelihood.

Besides causing environmental damage, oil and gas development could lower the barriers to entry for other industries with the potential to damage the pristine Arctic environment. Minerals development, shipping, fisheries and tourism may all be inevitable once we embark upon oil and gas development in the Arctic, critics maintain.[46]

REWARDS

Energy firms believe that these concerns can be addressed without foregoing the potential rewards, including energy security, employment opportunities and federal revenue.

Energy Security

Major oil firms with a stake in Arctic resource development predict that Arctic hydrocarbon resources will play an essential role in meeting demand around the world. "With energy demand projected to be about 30 percent higher in 2040 than it was in 2010, Arctic resources will play an important role in helping to provide the supplies needed to meet growing demand," according to ExxonMobil experts.[47] Likewise, Shell

forecasts "energy demand in 2050…to be twice that of today... Energy security – essential to sustain economic growth in the coming years – will depend on maintaining diverse energy supplies. New supplies will come from alternative resources and from new energy frontiers, such as the Arctic."[48]

Economic Prosperity

Strong demand for oil and gas will not only benefit the firms that extract the resources; federal, state and local government will collect substantial revenue from Arctic oil and gas development. Shell sums up the benefits of Arctic oil and gas development, claiming: "Arctic oil and gas could provide vital supplies that will maintain energy security for many consumers throughout the world, create wealth…and provide many jobs."[49] More specifically, the Center for Strategic & International Studies predicts that production from the Beaufort Sea alone could generate $87 billion over fifty years in federal leasing revenues, as well as tax revenue at the federal, state and local level.[50] Arctic resource development would also create jobs, an average of 30,100 nationwide, annually. This figure assumes "5.1 billion barrels of oil will be produced from 2019 to 2045, as well as 7 trillion cubic feet of gas between 2029 and 2057."[51] In the Chukchi Sea, development could procure $96 billion in revenues and create 24,600 jobs nationwide, annually.[52] The Chukchi Sea estimates assume that production "will total 4.8 billion barrels of oil from 2022 to 2057 and 7.8 trillion cubic feet of gas from 2036 to 2057."[53] Total U.S. government revenue from the Beaufort and Chukchi Seas could range from $193 billion to $312 billion, depending on the cost per barrel of oil (the study assumed prices between $65 and $120 per barrel).[54]

IV. Solutions

If oil and gas companies want to protect and ultimately expand their license to operate in the Arctic, they need to act now to affect change before the next Arctic lease sale in 2016. A two pronged approach can help with this endeavor—an education and engagement strategy—to ensure that public and government concerns do not jeopardize drilling plans.

EDUCATION APPROACH

Oil and gas operatives must convince relevant stakeholders that they can safely and successfully develop the Arctic by addressing their biggest concerns. An education strategy, which political scientists also call an "informational strategy," refers to the "strategic provision of information" for "lobbying, testimony in legislative or regulatory proceedings, and public advocacy."[55] This type of strategy is particularly effective in situations where the interest group, in this case, the oil and gas industry, is more knowledgeable on particular aspects of the issues than the government officials.[56] Given the highly technical nature of oil and gas operations, an informational strategy designed to educate key stakeholders on issues that concern them the most is likely to be effective.

One must acknowledge the limitations of an information provision approach in order to frame the discussion. When trust does not exist between the provider of information and the recipient, the strategy will be marginally effective at best. Since trust exists, to varying degrees, between industry and regulators and industry and the local community, an informational approach has the potential to be quite potent. However, there is minimal trust between the petroleum industry and the environmental movement, so this campaign will be unlikely to sway environmentalists. Nevertheless, environmentalists are included as recipients in the education campaign so that industry can claim they made a good faith effort to address the concerns of opponents. With this

caveat in mind, the next section addresses the potential recipients of the campaign in greater detail, as well as implementation, content and credibility considerations pertaining to the education initiative.

Recipients

While drafting an education strategy, firms must be clear about the stakeholders involved, their power to affect the outcome, their specific agendas and concerns, and the steps that must be taken to address these concerns. The bulk of the education initiative should concentrate on stakeholders who have a direct say on Arctic resource development—government officials and the indigenous communities on the North Slope. With this in mind, the industry would want to concentrate their federal level education efforts on key regulators at the Department of the Interior, sympathetic Members of Congress who sit on energy and environmental committees that have the capacity to draft legislation with a positive or negative impact on Arctic drilling, and President Obama's energy advisors who influence U.S. energy initiatives at the highest level.

In Alaska, the energy industry must take a more inclusive approach, focusing not only on the regulators and politicians who have the capacity to influence offshore drilling, but also on the local indigenous population. While the engagement segment of the strategy concentrates on the indigenous communities in far greater detail, it is important that they be included in the industry's education initiatives, as their misgivings may derail a firm's plans for the region. By educating these communities on the cost-benefit implications of drilling for oil in the Arctic region, the local stakeholders are more likely to come on board.

Environmentalists are unlikely to be swayed by an education initiative, but industry should still put forth a good faith effort to acknowledge their concerns. It is important to avoid casting the firm's relationship with the skeptical public and

environmental activists in adversarial terms. It is better to welcome criticism than to brush it aside as misguided. When dealing with the skeptical public and environmental activists, the company may want to organize meetings between inside and outside experts, arrange for public forums, and attempt to join issue with critics, identifying shared interests and points of disagreement.

Firm officers responsible for community outreach efforts should study objections raised by activists and the community needs likely to be affected, negatively or positively, by offshore development of Arctic resources. There is a good deal of misconception about industry practices and their record when it comes to safety issues and the ways local communities stand to benefit from investment in the Arctic; hence it is important to plan and execute an information campaign that will help garner public support. Even though staunch opponents of the oil industry may remain unconvinced, they will have to acknowledge industry's efforts to seek common ground and make room for the honest difference of opinion, which, in turn, will help firms establish goodwill and trust with the general public and regulators. While it is important to attempt to lay a foundation of trust with the environmental movement and the skeptical public, the education initiative will concentrate primarily on government officials and host communities.

Implementation

Oil and gas companies should form coalitions, specifically trade associations, to implement their education strategy. Since oil and gas companies all largely have the same goals for the U.S. Arctic and use the same rationale and science to justify their positions, it is logical for industry to team up under the umbrella of a trade association. Working together as a trade association would allow oil and gas companies to increase their

coverage, lower costs by pooling resources, and portray a unified front on Arctic resource development issues.

While coalitions do have their drawbacks, including high organization and maintenance costs, less control over the agenda and difficulty in creating a unified vision, the benefits of coalition-building outweigh the drawbacks. The oil and gas industry already has the infrastructure in place to spur education initiatives, including the American Petroleum Institute and the International Oil and Gas Producers Association. Therefore, organization and maintenance costs are likely to be minimal. At this early stage in the lifecycle of U.S. Arctic drilling, the primary issue is resource access. So at this time, firms with an interest in Arctic resource development largely agree on the issues and are likely to benefit from teaming up.

Some might argue that a peak association would be the best type of coalition to pursue a resource access agenda. While trade associations consist entirely of firms from a single industry, peak associations "include firms from a number of industries and thus represent a range of interests" on a particular issue.[57] While no doubt the mining, tourism and fishing industries would also like to see a more open and accessible Arctic, their rationales and industry best practices for safety are likely too diverse to justify teaming up with the oil and gas industry. Moreover, such peak organizations are not nearly as well developed as trade associations currently in operation, so building the infrastructure to implement an education initiative would probably be far more costly under the auspices of a peak association.

An emphasis on coalitions should not preclude oil and gas firms from working the issue on their own. Firms should take the opportunity to speak to government officials during their regularly scheduled lobbying appointments. In fact, if and when Arctic oil and gas operations eventually take off, individual relationships with government officials

at the federal, state and local level will be critical for securing permits to drill. The benefit from coalitions will largely be felt in the early stages, before Arctic oil and gas drilling becomes a mainstream practice. Coalition members will be in a position to secure information for meetings with regulators, without having to spend all of their own resources to develop the materials. It will be critical for firms to tailor the information produced by the coalition to fit the specific needs and circumstances of the individual firm looking to drill in Alaska offshore.

Content

There are several issues of particular concern to relevant stakeholders that must be addressed in an education initiative—oil spill response capabilities, similarities and differences between the Gulf of Mexico and the Arctic, marine mammal and habitat protection, and supply and demand implications.

Oil Spill Response Capabilities

First and foremost, the industry must address its oil spill response capabilities since this issue tends to generate the most concern. While prevention is the main objective, in the event of a low probability high consequence event, relevant stakeholders must be convinced that industry has sufficient plans in place to implement effective oil spill response technology. Energy companies, both on their own and in tandem with other firms across the industry through the Joint Industry Programme, are working to develop and enhance technology that will allow them to react effectively should this worst case scenario materialize.

The first method suggested for Arctic oil spill response is mechanical recovery. "Mechanical recovery…employs skimmers, booms, boats and personnel to collect and remove oil from the surface."[58] Critics maintain that mechanical recovery is ineffective in

the presence of sea ice, as was reported by the Pew Charitable Trusts.[59] This and similar reports site decade-old research, so proponents of Arctic oil and gas development must inform government officials of improvements and adaptations made for mechanical recovery to be effective in Arctic conditions. Specifically, the industry has developed several types of skimmers effective for oil recovery in ice-covered areas.

> Any mechanical recovery system working in ice-covered waters needs to deflect the ice in order to gain access to the oil and effectively remove it…[Arctic] skimmers are often brush belts or drums rotating through the slick and capable of recovering oil while processing small ice pieces. Some skimming units are equipped with heating systems, ice deflection frames, and advanced systems for pumping viscous oil/water/ice mixtures. Single vessels with built-in skimming or over-the-side-skimming systems using short sections of boom can maneuver between large ice floes and operate in higher ice concentrations than vessels towing independent booms.[60]

Industry also needs to make sure that government officials understand that ice concentration higher than 60 percent can aid the mechanical recovery techniques adapted to meet Arctic conditions by creating a natural barrier against the spread of oil.[61]

The second oil spill response technique is the use of dispersants. "Dispersants are chemicals sprayed or applied onto oil slicks to accelerate the dispersion of oil into the water column."[62] Critics are concerned that dispersants are untested in Arctic conditions and thus may prove ineffective in response to an oil spill. Also, they fear dispersants could be harmful to marine life in the surrounding area.[63] Industry can alleviate concerns by explaining how dispersants work under unique Arctic conditions. First, industry should remind critics that Arctic marine life is no more sensitive to dispersants than marine life found in other parts of the world, and dispersants are a widely accepted form of oil spill response in more temperate climates.[64] Second,

> Dispersants have been proven to be effective when applied at freezing and near-freezing temperatures…Water partially covered with ice can increase the time a dispersant is effective by up to one week, as ice can prevent oil from becoming weathered and emulsified. Research has also shown that ice can enhance

> dispersion, since ice motion can increase the surface turbulence, or mixing energy, needed for the process. Further, in marine situations where there are inadequate waves, the propeller wash from a shift can be used to enhance the necessary mixing energy.[65]

The third technique for oil spill response is in-situ burn. "In-situ burning of spilled oil on the water's surface involves a controlled burn of floating oil that is contained to the appropriate thickness."[66] Critics fear the controlled burn will have irreversible negative impacts on surrounding marine life and may not be effective in the Arctic. It will be important to remind government officials that the

> …Arctic environment helps with the efficiency of [in-situ burn] as the presence of ice reduces the spread of spilled oil and reduces the size of waves. These conditions yield thicker oil slicks, which increases the effectiveness of [in-situ burn] as a solution, while the cooler temperatures slow evaporation and extend the window of opportunity to conduct [in-situ burn] activity.

There are indeed some legitimate concerns regarding harm to marine life using in-situ burn, and the industry must be forthcoming about these issues. While combustion residue can be collected from the controlled burn on land, offshore the residue could sink and have an impact on the marine life. However, "sunken residue concentrations are likely to be spare and/or small in extent."[67] Despite this negative impact, the benefits of in-situ burn may outweigh the costs in Arctic conditions, as less equipment and fewer personnel are required to implement the technique compared to mechanical recovery and dispersants, making it more effective and practical in the Arctic. Concerned stakeholders should also be reminded that safety and air quality regulations govern the use of in-situ burn, thereby increasing the safety of the procedure. Appendix I summaries these oil spill response technologies in an infographic created by the Joint Industry Programme.

The fate of oil spilled under solid ice is perhaps the biggest concern that industry must address in this campaign. According to the Joint Industry Programme, "even large spills of crude oil underneath solid or continuous ice cover will usually be contained

within relatively short distances from the spill source…"[68] That said, industry cannot say with complete certainty what exactly would happen should a blowout occur under solid ice. Industry must be forthcoming about this issue in order to facilitate trust with stakeholders and explain research currently underway in order to address this issue further.

Gulf of Mexico and Arctic: Similarities and Differences

The next component of the education initiative will require firms to explain differences between drilling in the Gulf of Mexico and the Arctic—namely, a Deepwater Horizon incident in the Arctic is not inevitable. Since important differences between the Gulf of Mexico and the Arctic are not fully appreciated, it is imperative for industry to explain to stakeholders why the Gulf is not the Arctic. Lower pressure and shallower waters in the Arctic are two key differences. "Companies studying potential projects in the U.S. Arctic believe shallow waters will make it easier for divers and submersibles to respond to a potential blowout, while lower pressures will make a blowout less likely overall."[69] There will be less pressure due to Arctic oil and gas existing at shallower depths compared to the hydrocarbons in the Gulf of Mexico.

Oil and gas firms are only considering drilling in Arctic waters as deep as 500 feet, whereas firms often drill in 5,000 feet or deeper in the Gulf of Mexico.[70] And while oil at the Macondo well, which erupted in the Gulf of Mexico in 2010, spewed at a flow rate of 15,000 pounds per square inch, historical data suggests that oil will flow at a much lower rate on the Alaskan Outer Continental Shelf—at approximately 6,000 pounds per square inch. The oil spill commission report released in the aftermath of the BP oil spill corroborates that the "geological pressures in hydrocarbon deposits in shallow seas off Alaska are likely to be substantially below those encountered at Macondo, reducing some of the risks of a major blowout and challenges of containment."

Arctic conditions may work to firms' advantage when it comes to oil spill response. The International Association of Oil and Gas Producers argues that "cold water and sea ice can enhance response effectiveness by limiting the spread of oil and so allowing for more efficient in-situ burning. The window of opportunity for in-situ burning and dispersant operations in ice-covered waters can expand significantly when compared to equivalent spills in open water." Oil and gas firms will want to stress these considerations in their education initiatives.

Marine Mammal and Habitat Protection

The third element in the education strategy addresses marine mammal and habitat protection protocols. The industry takes several precautions to protect the surrounding environment during offshore operations. A particular concern is the impact of seismic operations on marine life, as critics argue that the sound waves can hurt marine life in a variety of ways. Industry must remind concerned parties that it has proven its ability to conduct seismic operations without harming marine life. Not only are seismic operations carefully regulated by the federal government to minimize negative impacts, but several decades of research indicates no link between seismic operations and marine mammal injury.[71] Nevertheless, the industry still takes precautions, and critics must be made aware.[72] Specifically, energy firms hire trained marine mammal observers to come on board during seismic operations and watch for marine mammals. If an observer spots an animal nearby, operations are put on hold until the animal leaves the area for at least 30 minutes.[73] Second, seismic survey operators use a "ramp-up" process to begin operations. This process "gradually increases the sound level being produced, allowing animals to leave the area if the sound level becomes uncomfortable."[74]

The industry must also address animal strandings, which critics argue are caused by seismic operations. In response to this argument, the industry should clarify that

animal strandings are scientifically proven to result from sickness, disorientation, natural mortality, extreme weather conditions or injury and therefore cannot be automatically attributed to seismic operations.[75] Documented animal strandings date back to the 7th century, well before seismic surveys were ever conducted.[76]

Supply and Demand Implications

One additional issue industry must address in its education campaign is the importance of Arctic resources in meeting rising worldwide demand for energy. It is vital to communicate demand growth estimates, as society must be made aware of the steady climb and the upward pressure this inevitable increase will put on the price of energy. Any campaign aimed at government or the general public must emphasize that the time to plan for such contingency is now, that putting off tough decisions will make it harder and costlier to deal with problems later. Once the price of energy consumption soars, the less well-to-do will be the first to feel the pinch as they struggle to keep their homes warm in the winter and cool in the summer. A full cost-benefit analysis combined with a smart education campaign about cutting-edge safeguards devised by industry will help persuade stakeholders about the value of developing oil and gas resources in faraway places like the Arctic.

Appendix II contains sample talking points that firms can use during meetings with government, community and environmental stakeholders to acquaint them with salient issues pertaining to offshore development in the U.S. Arctic. These talking points merely serve as a springboard; firms should develop these materials further and tailor them to address specific firm capabilities that allow the company to operate safely in the Arctic. Firms should also tailor talking points to address the specific concerns of the stakeholders at hand.

Credibility

The credibility of information disseminated to relevant stakeholders is an important component of an education strategy—for the program to be effective, the information must be credible. While on one hand the leading oil and gas firms—those with the best talent and greatest scientific minds in the industry—are best equipped to determine whether or not they can safely extract offshore oil and gas in the Arctic, there are legitimate concerns about companies providing information on issues in which they have a financial stake. Detractors are likely to use this "financial stake" to discredit the veracity of the information provided by oil and gas experts.

While the average citizen may be unlikely to trust science produced by oil and gas firms, their expertise is well regarded by experts in the field and the scientific community. Since this education initiative will be highly targeted, it is likely that most of the stakeholders addressed in this campaign will be familiar with these firms' reputation in the oil and gas industry and scientific community and put their trust in the data provided—at least to a greater extent than an average American would trust information provided by ExxonMobil, Shell and their counterparts across the industry.

Nevertheless, firms providing data for the education initiative should still take precautions to ensure the credibility of the campaign. To bolster credibility, firms should clearly state their research methods in the materials they provide to relevant stakeholders. Even if an external expert cannot verify each and every detail provided, these individuals should still be able to review the research methods to determine whether or not they are sound. Oil and gas companies should also partner with academia and government to conduct research. Working with academic and government partners will bolster the credibility of the information provided to relevant stakeholders in the education initiative.

ENGAGEMENT APPROACH

The second component of the two pronged approach to protect and expand firms' license to operate in the Arctic requires engaging the local community. Their support will be critical for firms looking to drill offshore in the Alaskan Outer Continental Shelf. The engagement approach will include a local content initiative and strategic community investments. Building trust with stakeholders will also be a critical component.

Local Content

The first step that oil and gas companies can use to engage the local community on the frontlines of the Alaskan Outer Continental Shelf is to adopt a local content policy. IPIECA, the global oil and gas industry association for environmental and social issues, defines local content as the "added value" brought to a host nation, region or local community through "workforce development" (employment and training of local the local workforce) and "investments in supplier development" (developing and procuring suppliers and services locally).[77] A study released by the Alaska Oil and Gas Association in 2011 revealed that in 2010, the oil in gas industry had a direct impact on 4,000 jobs and $600 million in annual wages for Alaskan residents.[78] A multiplier effect increases the positive economic impact of the oil and gas industry across the state.[79]

These figures indicate that Alaskans have a lot at stake if oil operations were to decline in Alaska. The state's oil production, largely at Prudhoe Bay, "has decreased by more than two-thirds, from [two] million barrels to 645,000 barrels per day, from 1988 to 2009.[80] This decline will have devastating economic consequences if additional supplies are not developed in the region. The EIA predicts that Alaska's production will continue to decline, to a mere 420,000 barrels per day by the start of the next decade, which will threaten the sustainability of the Trans-Alaska Pipeline System—a major source of income and economic vitality for Alaskans.[81] Therefore, when conducting stakeholder

outreach, firms must make sure Alaskans are aware of the positive impact that local content requirements specifically, and oil and gas development in general, have had on their state and local economies and how thwarting offshore oil and gas operations, in the wake of declining onshore resources, stands to devastate the Alaskan economy.

It is important to note that large international oil and gas firms that operate in countries with local content requirements are accustomed to developing a local workforce and local suppliers. For instance, the Alaska Pipeline Project—a joint venture between ExxonMobil and TransCanada that brings North Slope resources to market—employed up to 7,000 individuals during construction and 500 local residents during operations. The firms also engaged 44 Alaskan businesses as contractors as part of a local content program.[82]

The firms that are likely to lead the effort in U.S. Arctic offshore development will know to hire an Alaskan workforce and create programs to develop Alaskan suppliers. Smaller firms, the companies that are likely to subsequently engage in Arctic operations may not already promote local content to the same extent. It will be critical for these firms to put corporate policies in place that promote local workforce hiring and supplier development to win and maintain approval from local stakeholders. After all, "the time and effort invested in developing [a] local content strategy can create social and commercial benefits that progress economic growth and contribute to sustainable development."[83] And as a byproduct, these programs will improve the company's standing with state and local regulators as well as the host community, thereby easing the permitting and approvals process for oil and gas operations.

Strategic Community Investments

The second component of the engagement approach requires oil and gas firms to make strategic investments in the host community. According to IPIECA, social

investment programs are "voluntary contributions companies make to the communities and broader societies where they operate, with the objective of benefiting external stakeholders, typically through the transfer of skills or resources."[84] The association provides a seven step framework for oil and gas firms to consider when initiating a social investment program, and this framework is applicable to stakeholder engagement in Arctic communities. The seven steps are as follows:

- Start early
- Understand the wider context
- Determine the [strategic investment] objective
- Establish the [strategic investment] principles
- Link [strategic investment] strategy to [strategic investment] objectives
- Confirm alignment with project timeline
- Secure stakeholder buy-in[85]

1. Start Planning Early[86]

IPIECA recommends that companies implement a strategic social investment program at least two years prior to expected project approval.[87] With lease sales scheduled for the Chukchi and Beaufort Seas in 2016 and 2017, respectively, firms that plan to partake in these auctions should begin formulating their social investment programs now. Firms might be reluctant to make social investments when project approval is uncertain. In this case, the firm should consider the program an "investment in the long-term relationships with local stakeholders."[88] Even though the firm might decide not to move forward with the project in the immediate future (or perhaps the regulators may decline to issue the firm the necessary permits to drill), the company's plans could change course down the road. If the firm decides later on to resume the

project, it will benefit from the goodwill in the community and advance the firm's commercial interests in the region.

2. Understand the Context[89]

Oil and gas firms need to understand the concerns of the local community when developing their social investment programs. According to a study commissioned by the Bureau of Land Management, natives across the various villages in the North Slope are relatively distrustful of the oil and gas industry because they believe their concerns have historically been ignored. Despite many public meetings organized to bring together North Slope citizens, government and industry over the years, "most village residents do not feel their voices are heard or taken into account when making decisions that are likely to impact the communities."[90] Given the tense relationship between industry and the community, it might be wise to reach out to the community to learn straight from the source about the most pressing issues. The firm can conduct a baseline survey to glean issues of importance in the community and use the results of the survey to help craft a strategic social investment program. A baseline survey can also gauge the community's perception of the oil and gas industry, and the firm can use this information to rectify the negative perception.

3. Determine Program Objectives[91]

While no doubt the firm should take the results of the baseline survey into consideration when selecting strategic investment objectives, oil and gas firms will be inclined to create objectives that are mutually beneficial to the community and the firm. Science, technology, engineering and mathematics (STEM) education initiatives tends to fall into this category. Rex Tillerson, Chairman and CEO of ExxonMobil summed up the rationale behind STEM education initiatives:

> American employers do not have enough applicants with adequate skills, especially in science, technology, engineering and math. The "STEM-related" positions that U.S. industry needs to fill are not just for biochemists, biophysicists and engineers. More and more jobs are applying cutting-edge technologies and now demand deeper knowledge of math and science in positions that most people don't think of as STEM-related, including machinists, electricians, auto techs, medical technicians, plumbers and pipefitters.[92]

Oil and gas firms should consider investing in a STEM education initiative to help students in the community develop valuable skills, while also helping to build a labor force that ultimately helps the oil and gas industry meet its own hiring needs.

Companies hoping to adopt a STEM education initiative in the North Slope should partner with the North Slope Borough School District to target the 10 primary and secondary schools in the region.[93] By targeting students early in their education, industry can help instill in students a lifelong passion for science, technology, engineering and mathematics while they are still impressionable. It is not enough to target students who are already in college-level STEM programs. It is important to explain to young students the crucial importance of STEM skills for their future.

Firms can work with schools directly to craft STEM-related curricula, but if this proves to be a daunting task, one alternative is for the firm to join Junior Achievement. Junior Achievement is an organization that educates primary and secondary school students about "entrepreneurship, work readiness and financial literacy through experiential, hands-on programs."[94] Volunteers from industry and the community deliver the curriculum directly in the classroom, teaching important STEM-related skills while sharing their experiences with students to inspire them. Acknowledging the decline of students with an interest in STEM related fields, Junior Achievement provides substantial STEM-based projects for volunteers to implement in the classroom. "It is crucial that we reinvigorate teens about pursuing opportunities in STEM and medical-related careers…These fields drive our economy and innovation; they are not only high-growth

career paths but also creative outlets where teens can apply their passions," said Jack E. Kosakowski, president and CEO of Junior Achievement USA.[95]

The industry should also target higher education by developing partnerships with Ilisagvik College, the only accredited college on the North Slope.[96] With programs in emergency services, heavy equipment operation, construction trades and information technology, there is ample opportunity for the industry to have a positive impact on the community while helping fulfill the company's own local content programs.[97] One option is for the firm to sponsor a scholarship program for qualified applicants who plan to enroll in a degree or certificate program that directly relates to oil and gas operations. Easing financial hurdles to achieving a college education could boost enrollment, ultimately creating a larger potential workforce for the oil and gas industry in the Arctic region while having a positive economic effect on the community at large. Another option is for firms to create mentorship programs. It is quite possible that the students at Ilisagvik College are the first in their family to receive a higher education. It is important that these students have someone they can speak to—someone who understands their position. Therefore, pairing up an oil and gas worker with an Ilisagvik College student studying a similar field could have positive results. It would give the student an opportunity to learn from someone first-hand what the job really entails.

4. Determine Program Principles[98]

Operating principles provide "the overarching 'lens' through which strategic investment decisions will be reviewed."[99] The first overarching principle to guide a strategic investment program is early engagement—stakeholders must be engaged early on in the planning process. In order to engage stakeholders early in the process, the firm must conduct a baseline survey to glean the community's own perceptions of their needs, convene stakeholder consultation meetings to involve community members in the

process, and explain to participants the rationale behind the social investment program as well as the benefits of the program for the local community. Appendix III offers a plan for conducting such community meetings.

The second guiding principle for strategic investment decisions is mutual benefit—all programs in the region should benefit industry and the community together. Industry will not be successful if they adopt programs which positively impact oil and gas firms at the expense of the community. If programs are not mutually beneficial, firms will jeopardize their license to operate in the region. As discussed previously, some mutually beneficial programs include primary, secondary and higher education initiatives that drive social mobility and economic vitality in the community while helping firms address their own needs.

The third guiding principle is flexibility—social investment programs must have sufficient flexibility to evolve to meet the business case as needed. Regular review of programs in light of project developments is necessary to ensure flexibility. For instance, as oil and gas projects progress on the North Slope, the firm should be working with the schools to make sure that education programs remain relevant, that students maintain skills to be employable, that scholarship programs are available for the appropriate programs, and that industry is providing mentors to college students in the relevant fields.[100] By planning early, promoting mutually beneficial programs and regularly reviewing programs to adjust for fit with the business need, the firm can bolster its social investment decisions on the North Slope and implement a consistent program.

5. Link Program Strategy to Program Objectives[101]

It is not enough simply to invest money in a program and then sit back. Industry must monitor these programs to make sure their investments have the intended effect. After selecting particular STEM education programs at the primary, secondary and higher

education levels, industry should measure how many students ultimately pursue careers in science, technology, engineering or mathematics to determine whether their investments have been effective. Specifically, the firm can carry out this step by contracting out to a company that creates and conducts surveys to measure program effectiveness over time. The survey could be given to students at several milestones throughout their education (such as elementary, middle, high school and college graduation) to measure their academic interests, career goals and actual job obtained upon completing school. If it turns out that the number of students interested in STEM fields is not increasing with industry's involvement, then the investments are not helping the firm meet their objectives and program adjustments must be made. "Without a clear understanding of how [a program's] various aspects are connected, social investment risks becoming a multitude of good intentions that cumulatively do not translate into effective interventions."[102]

6. Align Program to Project Timeline[103]

The oil and gas industry requires particular skills in its employees at different stages of a project. For instance, construction skills might only be required for several years. As the project moves from development into production, operations skills might become more relevant. In order to make sure that the local community has the requisite skills to meet the needs of industry as offshore resource development in the Arctic progresses, industry must work with their community partners to ensure these institutions produce graduates with the right skills at the right time. Specifically, industry can tailor their higher education scholarship and mentorship programs to secure students in programs that fit the needs of industry at a given time.

In general, higher education and workforce development initiatives must be highly tailored to meet industry needs, while the STEM education programs at the

primary and secondary level should be broad-based. When a child is in the early stages of his or her education, it is important to receive a broad education so the student can determine his or her interests and where his or her skills lie. Tracking a primary or secondary student early on in a particular STEM-related trade could have negative implications down the road. Giving students broad exposure to science, technology engineering and mathematics disciplines, as well as the rest of the district-required curriculum will help students receive a well-rounded education, but one that exposes the students to disciplines that are in high demand both on the North Slope and around the world.

7. Obtain Buy-in Early[104]

Buy-in from stakeholders will increase the legitimacy of the social investment program, as well as "strengthen the capacity of authorities to meet community demands and take over programs initiated or supported by the company."[105] After collecting data from the baseline community survey and stakeholder consultation meetings, the company should take this data, formulate a strategic social investment plan outline, and then convene a meeting which includes the Mayor of the North Slope Borough, representatives from each of the eight North Slope Villages and the Superintendent of the North Slope Borough School District.

The company should discuss the findings from the survey and stakeholder consultation meetings, share the social investment strategy, explain how the survey and meeting findings form the basis of the plan, and seek input from the community leaders. This participatory strategy will create buy-in among the community members and government officials by including them in the process. The firm should also create a document which spells out program objectives, implementation procedures, roles and

responsibilities for relevant parties, as well as a timeline to make sure all parties are on the same page.[106]

Critics might argue that a highly tailored STEM education social investment program that fits the needs of the company on the North Slope at any given time in the progression of offshore projects may in fact set the community up for failure. What happens when a particular stage of development ends and the employee no longer has the requisite skills to continue with the project? What if the industry were to determine that Arctic projects are not commercially viable? What would happen to the local residents who have trained for these jobs, only to find out their services are no longer needed? This scenario could have a serious psychological and economic effect on the North Slope community, and thus, industry should take steps to mitigate adverse contingencies.

Companies with operations in the Arctic also have operations around the world. So even if the workers are no longer needed in the Arctic, no doubt their particular skills could be used on some other project elsewhere. Oil and gas companies with an international presence looking to develop a workforce on the North Slope could adopt an international rotational training program. This type of program would have several benefits. First, the employees would be given the opportunity to receive hands-on experience that will prepare them for their potential roles in the Arctic, assuming operations in the U.S. Arctic move forward as planned. Second, if a particular stage of development is completed on a U.S. Arctic project and an employee's skills are no longer required, the employee will have experience and be employable on projects located in other parts of the world. And in the event that operations in the U.S. Arctic must cease due to economic, political or regulatory pressures, these employees, again, will have experience working in other parts of the world and will have been given the opportunity to develop a network which they can draw upon as they look for new work.

Firms should have the incentive to put their Native Alaskan employees to work on projects elsewhere to maintain the goodwill of the indigenous population. Just because Arctic drilling may not be viable now does not mean it will not be viable in the future. And should the time come that a firm wants to re-enter the U.S. Arctic, the goodwill already earned will help maintain the firm's license to operate in the region.

If the firm is uncertain on which stakeholders to include in meetings, where meetings should be held, types of effective community-firm partnerships, or other issues related to strategic community investments, the firm should considering hiring an individual either from the North Slope or with substantial experience working in the region. This person's insight and experience could prove vital for making effective decisions related to strategic community investments. Most importantly, hiring someone who already has connections in place can facilitate trust between the firm and the community, which will be essential for protecting and expanding a firm's license to operate offshore.

Building Trust

Some North Slope citizens do not believe industry and government have adequately considered their concerns regarding oil and gas development in the region. "It is also clear that the residents of communities who have yet to experience direct impacts from oil-related activities do not have adequate information about adverse or positive impacts of such activities in communities already impacted."[107] There is a critical opportunity for oil and gas firms to go into all of the North Slope villages, not just Barrow—the center of economic and administrative activity on the North Slope—to educate these communities on the various issues surrounding Arctic oil and gas development.

These communities are understandably worried about potential oil spills and marine life impacts which could negatively affect their subsistence lifestyles. Oil and gas companies with an interest in developing the Arctic must go into these communities and address these concerns and begin to build trust with the indigenous population. Listening to concerns will not be enough; oil and gas operatives must work with the local community to develop mutually agreeable solutions to potential points of conflict. According to IPIECA, "an open dialogue, in which the company and the community feel able to voice their views freely, maximizes the likelihood that the company's presence will have positive impacts for all."[108]

Trust between the local community and industry will be critical if the parties are to foster a constructive dialogue which ultimately protects and expands a firm's license to operate in the Arctic. Developing long-term relationships with the local community members will help establish trust over time. Unfortunately, common oil and gas staffing policies tend to work at cross purpose to this goal. Oil and gas companies usually rotate their employees to new positions across the company every few years to help the employee develop a diverse and rich technical skillset. This practice makes it difficult for employees on the ground to establish long-term relationships.

Perhaps the rotation model is not well-suited for dealing with local stakeholder concerns in the Arctic, especially given the history of the indigenous population feeling ignored and slighted by industry representatives. It is advisable for employees involved in community, public or regulatory relations to have substantially longer rotations in the Arctic region. The life of an Arctic project from exploration through production and reclamation could last over 50 years. It would be unreasonable to expect an employee to spend their entire career in one region. But oil and gas firms should consider placing their employees in external-facing positions for the duration of a particular stage in the oil and

gas lifecycle to increase continuity and ensure successful stakeholder relations. Then, when a particular phase of the oil and gas lifecycle ends, these employees can transition off the project after helping to ensure a smooth turnover with his or her successor. It will be critical for the leaving employee to make the appropriate introductions between the local community and the successor to ensure continuity.

It will also be important for employees working on stakeholder relations in Alaska to make sure residents understand that offshore Arctic drilling will not necessarily increase their annual royalty check. Drilling will take place in federal waters, so it will not impact the amount that Alaskan residents receive annually from the state government. Since some Alaskans may process decisions to drill through the prism of the annual royalty check, it is important to be up front with them that while the potential economic benefits of drilling in the Arctic are vast, it will not directly lead to an increase in the royalty check. Oil companies could severely damage nascent trust with community members by not making this point clear from the beginning.

V. Conclusion

The coming year will be an important one for the future of Arctic oil and gas development in the U.S. offshore, with new federal guidelines governing Arctic drilling expected, changes to the leasing system on the horizon, and activism from environmental groups concerned with Arctic drilling. Industry must be aware of these issues and begin to act now to protect and ultimately expand their license to operate in the U.S. Arctic. Oil firms with an interest in Arctic resource development should formulate and implement a comprehensive strategy to alleviate public and government concerns.

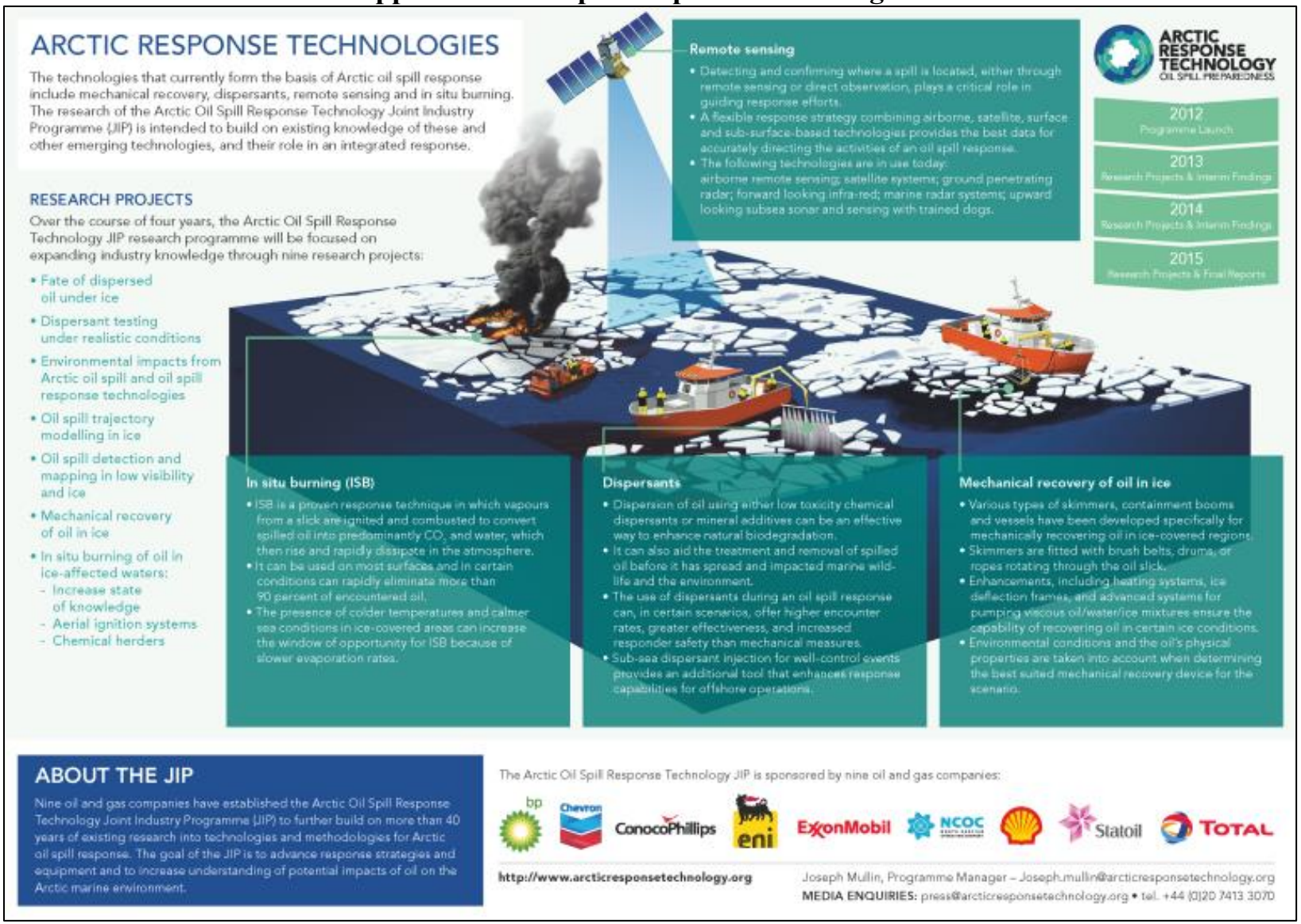
First, firms must adopt an education strategy designed to inform key stakeholders—including government officials at the federal, state and local level, as well as the indigenous communities on Alaska's North Slope—on issues that concern them the most. These issues include oil spill response capabilities, similarities and differences between the Gulf of Mexico and the Arctic, marine mammal and habitat protection, and supply and demand implications. While the environmental movement is unlikely to be swayed by an education campaign, industry should put forth a good faith effort to alleviate their concerns as well. Firms would be wise to leverage trade association infrastructure throughout their education campaign.

Second, firms should implement an engagement strategy with the indigenous communities on Alaska's North Slope. Implementing local content initiatives designed to bolster local workers and suppliers and making strategic community investments which are mutually beneficial to the firm and community alike will help bring North Slope residents on board with plans to drill in the region. Also, firms must take steps to rectify a history of tense industry-community relations. Industry can start to re-build trust by stationing their employees on the North Slope for longer durations which align with particular phases in the lifecycle of an offshore project.

While this report focuses exclusively on U.S. offshore Arctic development, one must not forget that Arctic projects are already moving forward in other parts of the world. Norway began exploring the Barents Sea in the 1970s and Russia started to explore this region in the 1980s.[109] Russian energy firms have recently established joint ventures with Western countries to tap vast Arctic resources across the country.[110] Russia and Norway also have plans to jointly develop the shelf of the Barents and Okhotsk Seas.[111] It is important for U.S. firms to monitor these developments—learn from their experiences dealing with government critics and activists, familiarize themselves with best practices pertaining to safety and environmental safeguards in harsh Arctic climates, understand technological innovations adapted for Arctic conditions, and apply these lessons to U.S. offshore development.

The industry has tremendous potential to tap vast Arctic resources in the United States—the largest undiscovered Arctic oil deposits with an economic potential in excess of $1 trillion—while helping to meet growing demand for energy worldwide.[112,113] Industry has the capacity to make this possibility a reality, and it begins now with an education and advocacy campaign.

Appendix I: Oil Spill Response Technologies[114]



Appendix II: Suggested Arctic Resource Development Talking Points

1. With worldwide energy demand expected to grow about 30 percent over the next several decades, Arctic resources will play a critical role in meeting demand.
2. The Arctic contains 22 percent of the world's undiscovered oil and gas resources, with 36 percent located in North America.
3. The Alaskan Arctic holds more oil deposits than any of its Arctic neighbors—approximately 30 billion barrels.
4. Oil and gas development in the U.S. Arctic has the potential to generate over $1 trillion in economic activity.
5. Arctic oil and gas development will strengthen U.S. energy security while generating economic prosperity.
6. Beaufort and Chukchi Sea production could generate $87 and $96 billion, respectively, in federal, state and local government revenue.
7. Beaufort and Chukchi Sea production could create 30,100 and 24,600 jobs across the United States, respectively.
8. With Alaska's oil production on the decline, offshore resources are needed to sustain the Trans-Alaska Pipeline System—a major source of income and economic vitality for Alaskans.
9. The industry has adapted several response technologies—including mechanical recovery, dispersants and in-situ burn—to meet unique Arctic conditions.
10. The Arctic climate, including cold water and ice presence, can enhance response capabilities by restricting the spread of oil.
11. The oil and gas industry takes precautions to protect marine life during offshore operations, including animal observation decks and slow-start seismic technology.

Appendix III: Elements of a Community Meeting Communications Plan

1. **Purpose:** The firm will hold regular community meetings to educate residents on offshore resource development and to address their questions and concerns.
2. **Agenda:** Each meeting will address a particular component of offshore development. Meeting topics include but are not limited to oil spill response capabilities, environmental safeguards, benefits for the local community, as well as issues relevant to the various stages of offshore oil and gas development.
3. **Frequency:** Prior to exploration, the firm should host several meetings on oil spill response, environmental safeguards and community benefits. When operations begin, meetings should be held prior to new stages of development to alleviate potential concerns regarding the next phase.
4. **Location:** To create buy-in, meetings should be held in the economic center of the North Slope (Barrow) as well as in the eight villages. All residents should feel included in the process, and the firm should take steps to meet with community members who may be unable to travel long distances to attend these meetings.
5. **Leaders:** It would be ideal for community members to hear from a peer to increase trust and facilitate a positive relationship between industry and the community. When possible, meetings should be run by locals who see eye to eye with industry. If this is not possible, the firm should hire someone from the region or with substantial contacts in the area to facilitate meetings.
6. **Audience:** All stakeholders in the region are invited to attend these meetings, including government leaders, environmental activists and local residents.
7. **Communication mechanism:** The firm can send blast emails to communicate meeting details (i.e. time, location, agenda). The firm should follow up personally to ensure that VIPs attend. After meetings, send minutes to all stakeholders.

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